Access DB# 138926

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 11-29-04
Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 10/085,935
Mail Box and Bldg/Room Location: 9D60 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Please see attached Bib

SCIENTIFIC REFERENCE BR
Sci & Tech Info Ctr
NOV 30
Pat. & T.M. Office

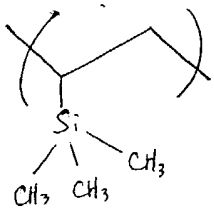
Inventors (please provide full names):

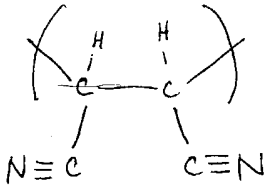
Earliest Priority Filing Date:

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please search the polymer having both of the repeat units

This search is for Polymer C of Cl.#17





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STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: EL	NA Sequence (#)	STN
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#)	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr.Link
Date Completed: 12-3-04	Litigation	Lexis/Nexis
Searcher Prep & Review Time:	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time:	Other	Other (specify)

PTO-1590 (8-01)

UNITED STATES PATENT AND TRADEMARK OFFICE

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Bib Data Sheet

CONFIRMATION NO. 4343

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/085,935	03/01/2002 RULE	430	1752	KOJIM-448

APPLICANTS

Takanobu Takeda, Nakakubiki-gun, JAPAN;
Jun Hatakeyama, Nakakubiki-gun, JAPAN;
Toshinobu Ishihara, Nakakubiki-gun, JAPAN;
Tohru Kubota, Nakakubiki-gun, JAPAN;
Yasufui Kubota, Nakakubiki-gun, JAPAN;

** CONTINUING DATA ********** None S.T.L.

** FOREIGN APPLICATIONS **********
JAPAN 2001-056543 03/01/2001 S.T.L.

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 03/22/2002

Foreign Priority claimed	STATE OR COUNTRY	SHEETS DRAWING	TOTAL CLAIMS	INDEPENDENT CLAIMS
☑ yes ☐ no	JAPAN	2	12	1

35 USC 119 (a-d) conditions met: ☑ yes ☐ no ☐ Met after Allowance

Verified and Acknowledged: S.T.L. (Examiner's Signature / Initials)

ADDRESS
23599

TITLE
Silicon-containing polymer, resist composition and patterning process

FILING FEE RECEIVED	FEES: Authority has been given in Paper
1092	No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:

☐ All Fees
☐ 1.16 Fees (Filing)
☐ 1.17 Fees (Processing Ext. of time)
☐ 1.18 Fees (Issue)
☐ Other _____
☐ Credit

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     FILE 'REGISTRY' ENTERED AT 17:55:00 ON 03 DEC 2004
                E C5H12SI
L1           209 S E3
                E C4H2N2
L2           293 S E3
L3             1 S L1 AND L2

     FILE 'ZCAPLUS' ENTERED AT 17:55:54 ON 03 DEC 2004
L4             1 S L3


=> file zcaplus
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=> d l4 1 all hitstr

L4   ANSWER 1 OF 1  ZCAPLUS  COPYRIGHT 2004 ACS on STN
AN   2002:671932  ZCAPLUS
DN   137:202031
ED   Entered STN:  06 Sep 2002
TI   Preparation and patterning process of silicon-containing chemical
     amplification positive resist compositions
IN   Takeda, Takanobu; Hatakeyama, Jun; Ishihara, Toshinobu; Kubota,
     Tohru; Kubota, Yasufumi
PA   Shin-Etsu Chemical Co., Ltd., Japan
SO   Eur. Pat. Appl., 33 pp.
     CODEN: EPXXDW
DT   Patent
LA   English
IC   ICM  C08F030-08
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ICS G03F007-075; C08G077-00
CC 37-3 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1236745	A2	20020904	EP 2002-251419	20020228
	EP 1236745	A3	20040324		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002348332	A2	20021204	JP 2002-47351	20020225
	US 2002168581	A1	20021114	US 2002-85935	20020301
PRAI	JP 2001-56543	A	20010301		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1236745	ICM	C08F030-08
	ICS	G03F007-075; C08G077-00
EP 1236745	ECLA	C08F030/08; G03F007/075M2

AB Novel silicon-contg. polymers, which are obtained by copolymg. vinylsilane with a compd. having a low electron d. unsatd. bond such as maleic anhydride, maleimide derivs. or tetrafluoroethylene, are suitable as the base resin in chem. amplified pos. resist compns. used for micropatterning in a process for the fabraction of semiconductor devices. The resist compns., which are sensitive to high-energy radiation, such as deep-UV light, laser beams, electron beams or X-rays, can form high aspect ratio patterns with high sensitivity and resoln. as well as improved resistance to oxygen or halogen gas plasma etching. Thus, maleic anhydride and trimethylvinylsilane were polymd. in THF using radical polymn. technique; the silicone polymer, photoacid generator, dissoln. inhibitor were thoroughly dissolved in propylene glycol monomethyl ether acetate; the resist soln. was spin coated onto cured DUV-30/novolac resist substrate and then baked at 100.degree. for 90 s to form a resist film of 0.2 .mu.m, followed by exposing to laser beam, baking at 100.degree. for 90 s, and developing in TMAH to obtain a pos. pattern; the resist pattern was then evaluated in sensitivity, resoln., and etc.

ST silicon contg chem amplification pos resist compn patterning process; maleimide vinyl polymer semiconductor device radiation sensitive resist; maleic anhydride trimethylvinylsilane copolymer

resist device

IT Positive photoresists
(UV; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT Phenolic resins, uses
(novolak, substrate layer; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT Resists
(pos.-working radiation-sensitive; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT Electron beam resists
(pos.-working; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT Etching
Semiconductor device fabrication
(silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT Polymers, preparation
(silicon-contg.; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT 26702-38-5P, Maleic anhydride-trimethylvinylsilane copolymer
452912-28-6P, N-Methylmaleimide-trimethylvinylsilane copolymer
452912-29-7P 452912-30-0P, Trimethylvinylsilane-tetrafluoroethylene copolymer 452912-31-1P, Maleic anhydride-vinylheptamethylcyclotetrasiloxane copolymer 452912-32-2P, Maleic anhydride-bis(trimethylsilylmethyl)vinylmethylsilane) copolymer 452912-33-3P, Maleic anhydride-vinylheptamethylcyclotetrasiloxane-1-ethylcyclopentyl methacrylate copolymer 452912-34-4P, Maleic anhydride-bis(trimethylsilylmethyl)vinylmethylsilane-1-ethylcyclopentyl methacrylate copolymer 452912-35-5P, Maleic anhydride-vinylheptamethylcyclotetrasiloxane-2-ethyl-2-adamantyl methacrylate copolymer 452912-65-1P, Maleic anhydride-trimethylvinylsilane-1-ethylcyclopentyl methacrylate copolymer
(crued and uncured; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT 409321-21-7 409321-23-9
(dissoln. inhibitor; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT 66003-76-7 66003-78-9
(photoacid generator; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT 84540-57-8, Propyleneglycol monomethyl ether acetate
(solvent; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

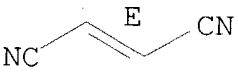
IT 59269-51-1, Polyhydroxystyrene
(substrate layer; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)

IT 81458-41-5, OFPR-800
(substrate; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)
IT **452912-29-7P**
(crued and uncured; silicon-contg. chem. amplification pos. resist compns. and patterning process thereof)
RN 452912-29-7 ZCAPLUS
CN 2-Butenedinitrile, (2E)-, polymer with ethenyltrimethylsilane (9CI) (CA INDEX NAME)

CM 1

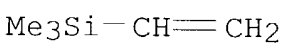
CRN 764-42-1
CMF C4 H2 N2

Double bond geometry as shown.



CM 2

CRN 754-05-2
CMF C5 H12 Si



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